

## Of Mice and Humans

The second week of February 2001 marked the beginning of the "post genomic era" with the stunning announcements by Dr. Francis Collins, Director of the National Human Genome Research Institute, and Dr. J. Craig Venter, Celera Genomics. The publicly funded consortium of academic centers and Celera reported the probable number of human genes to be 30,000.

Mere gene numbers were not the only finding. Chromosomes were described as a rich archaeology; large blocks of genes seem to have been extensively copied from one human chromosome to another. Genetic archaeologists are beginning to consider the order in which the copying occurred and to reconstruct the history of the animal genome.

And what of the mouse? Dr. Mark Adams of Celera Genomics announced Celera had assembled the mouse's genome which will be of considerable help in interpreting the human genome.

*Continued on page 4*



## MMHCC Mouse Repository

On February 22, 2001 the NCI announced the establishment of a new NC I- MMHCC Mouse Repository located in Frederick, MD. The cancer research community can anticipate 30 mouse strains will be ready for distribution by the end of 2001. Information about mouse strains and the process for new strain submission is located at:

<http://web.ncifcrf.gov/researchresources/mmhcc/default.asp>.

According to Dinah Singer, Ph.D., Director of NCI's Division of Cancer Biology, "the Repository is one major tangible outcome of the MMHCC program which was established in 1999 to facilitate the development and validation of mouse models of human cancer and to accelerate their dissemination to the research community."

## Music and Science

Apollo was the god of both music and medicine. Do physicians and musicians show similarities? See page 2 for commentary.

### INSIDE THIS ISSUE

1	Mouse and Human Genome
1	MMHCC Mouse Repository
2	Calendar of Events
	Mouse Phenome Database
4	Minutes from IG February 6, 2001 Meeting
6	Agenda for IG March Meeting

## CALENDAR OF EVENTS

March 24-28, 2001  
New Orleans  
AACR Annual Meeting

April 17-19, 2001  
Nashville  
Prostate Organ Site Committee pre-Meeting  
Charles Sawyers  
Suresh Mohla, IG

May 3-4, 2001  
Bethesda  
Pre-Clinical Trials Standing Committee (Validation)  
Vicky Richon/Kevin Shannon  
Richard Messman, Wendy Patterson, IG  
Mary Wolpert, Steering

May 15-17, 2001  
Bar Harbor  
Technologies Standing Committee  
Raju Kucherlapati  
Dan Gallahan, Jennifer Couch, IG

May 24-25, 2001  
Nashville  
Gastrointestinal Organ Site Committee (Pancreas)  
Bob Coffey, Steve Leach  
Susan McCarthy, IG

June 12-16, 2001  
Madison  
Genetic Modifiers  
Joanna Groden  
Carol Kasten-Sportes, IG

June 20-22, 2001  
Boston  
Lung Organ Site Committee  
Tyler Jacks, David Tuveson  
Harold Seifried, IG

July 9-12, 2001  
San Francisco  
MMHCC Steering Committee Meeting

September 9-11, 2001  
Rockville  
High Resolution Meeting \*  
Sponsor: NCI Biomedical Imaging Program  
John Hoffman, Barbara Croft, Steering

\* for meeting information, see:  
<http://www.ornl.gov/HiRes2001/>

## Mouse Phenome Database

Molly Bouge, Ph.D., Mouse Phenome Project Leader, Jackson Laboratory, announces the Mouse Phenome Database (MPD). This database has been created to establish a collection of baseline phenotypic data on commonly used and genetically diverse inbred mouse strains through a coordinated international effort. Dr. Bouge projects the overall success of this project will involve three-way partnerships including independent investigators, The Jackson Laboratory, and pharmas/foundations. Academic researchers may be eligible for supplements from pharmas/research foundations for phenotyping initiatives. For more information, see <http://aretha.jax.org/pub/cgi/phenome/mpdcgi?>

...from Terry Van Dyke, co chair MMHCC

---

### Commentary on Music and Science...

Dr. Rebecca Martin, an internist, University of Arkansas, sees a connection between diagnostic medicine and interpreting a musical score. Internists, like musicians, require intuition and the ability to listen. Delving into an illness or a patient's condition is like exploring the layers of a piece of music. Having all medical history and knowing every symptom is like analyzing a musical score. You may have all the notes of the music but a certain intuitive quality is needed. When you put it all together, what does it mean? What do you hear?

---

Brain teaser! Match the organism with its genome:

- |              |                         |
|--------------|-------------------------|
| ___ 1. human | a. 13,601               |
| ___ 2. worm  | b. approximately 30,000 |
| ___ 3. fly   | c. 19,098               |

Mouse and Human, continued from page 1.

Mouse and man last shared a common ancestor about 100 million years ago. Though the DNA in both genomes has been subjected to constant change, when the mouse genome is overlaid with the human genome, the regions of conserved sequences stand out from the “junk” DNA.

Celera reports only 300 human genes have no counterpart in the mouse. The mouse genes are generally in a similar order to human genes, but blocks have often been transferred to other chromosomes. The regions of mouse/human similarity, regions that don't seem to be genes, are probably control regions of DNA. There are some puzzling regions of similarity, these regions being stretches of sequence identity where genes are not predicted. Further these regions are larger than what you would predict from regulatory regions.

Stay tuned, maybe Celera's newest project, the rat genome will give us greater insight into genomic archaeology.

*...excerpts from the New York Times*

---

*Answers to Brain teaser: human (b), worm (c), fly (a)*

---

---

## IMPLEMENTATION GROUP MEMBERS

### Organ Site Committees

Breast Cancer Models - Colette Freeman

CNS Cancer Models - Iqbal Ali, Judy Mietz

Gastrointestinal Cancer Models - Susan McCarthy

Hematopoietic Cancer Models - Allan Mufson

Lung Cancer Models - Harold Seifried

Ovarian Cancer Models - Jane Fountain

Prostate Cancer Models - Suresh Mohla

Skin Cancer and Melanoma Models - Jaye Viner

### Standing Committees

Genetic Modifier Tools - Carol Kasten-Sportes

Infrastructure - Kenneth Buetow, Jules Berman

Mouse Engineering - Daniel Gallahan

Pathology and Lab Medicine - Barbara Conley

Pre-clinical Trials - Richard Messman, Wendy Patterson, Kathleen Sybert

Technologies - Jennifer Couch

## STEERING COMMITTEE MEMBERS

Barbara Croft, Jorge Gomez, James Hanson, John Hoffman, Jim Jacobson, Ronald Lubet, Mary Wolpert

## Minutes from the Implementation and Steering Group Meeting February 6, 2001

**Attendees:** I. Ali, K. Buetow, J. Couch, B. Croft, S. de Coronado, J. Fountain, C. Freeman, J. Hoffman, D. Gallahan, J. Hanson, C. Kasten-Sportes, R. Lubet, J. Mietz, S. McCarthy, J. Oberthaler, W. Patterson, S. Seweryniak, J. Sharpe, B. Slater, B. Tarnowski, J. Viner, M. Wolpert

### Action Items:

- Remind and encourage the committee chairs to submit content for placement on the public website
- Email Ken Buetow if you need a user name and password to access the eMice website
- Please contribute an article for MouseTracks newsletter
- Each IG member's role is dependent upon the comfort level with the expectations and working relationship between the IG member and their committee chair
- The regular IG meeting time will be the first Tuesday of each month at 2 pm; next meeting will be March 6, 2000

### Summary:

1. The IG members/attendees at the January, 2001 MMHCC Steering Committee Meeting in Orlando summarized their committee's activities:

Ken Buetow, Infrastructure Standing Committee. Co-chairs, Terry Van Dyke and Tyler Jacks, appointed an Oversight Committee (Allan Balmain, Tyler Jacks, David Threadgill and Terry Van Dyke; Betty Tarnowski will serve as NCI point of contact) to be responsible for the review and approval of website content. Available content for the website (in drafted form) includes the mammary CD, vocabulary site, phenotype database, Repository mouse list, the link to the MMHCC Repository, and the link to the Cancer Genetics Network's Ovarian Cancer Screening Trials for High Risk Patients.

Barbara Croft emphasized the need for a public website even if it is only a telephone book of MMHCC members.

Jay Viner, Cutaneous Oncology Organ Site Committee. Jay summarized this committee's January 31-Feb. 3, 2001 Workshop (Puerto Rico). Five recommendations that came out of this meeting will be submitted to the MMHCC Steering Committee. These are:

#### Recommendation 1

- Need for marker analyses of tumor and stromal compartments in cutaneous cancer models
- Fund efforts to evaluate the usefulness of currently available antibodies for immunohistochemistry in paraffin-embedded tissues and optimize protocols
- Fund efforts to develop new markers for such purposes

#### Recommendation 2

- Need for a systematic screen for genomic and genetic changes in sporadic melanoma and non melanoma skin cancers.

#### Recommendation 3

Need for genomic resources:

- Mouse BACs: prioritize identification and mapping of BACs in loci known to be altered in human melanoma and non-melanoma skin cancers.
- Mechanism for distribution

#### Recommendation 4

Need for genomic resources:

- CGAP: generate and establish cDNA and ESTs libraries for
  1. melanocytes and various stages of melanoma
  2. keratinocytes and various stages of SCC
  3. BCC

#### Recommendation 5

Consensus of this workshop:

- Approval of long-term outcome study in mice with cutaneous tumors exceeding 1 cm. size limit but with good health
- Issue of strains is important
- Repeat this meeting on an annual basis

Discussion. Jim Hanson suggested that it would make a difference to an IROC if the research aims clearly stated "determine if the tumor will metastasize and therefore require long term follow up".

Wendy Patterson, Pre-Clinical Trials Standing Committee. The committee will hold a meeting, May 3-4, 2001 to focus on the validation of mouse models using preventive therapeutic resources.

Iqbal Ali, CNS Organ Site Committee. During their Breakout Sessions, there was much discussion about website; the committee intends to put the pathology from the New York City meeting on the web. Main thrust was the need for money to pay for the pathologist doing the annotation for the pathology slides and for creating the CD of the meeting pathology.

Judy Mietz, Ovary Organ Site Committee. The Ovary group is small; they have requested more interaction with the SPORES.

Colette Freeman, Breast Cancer Models Organ Site Committee. The Breast committee already has mammary gland material on line; the CD for pathology is done. Jeff Greene just recently sent a draft of an introductory paragraph for the eMice website.

Dan Gallahan, Mouse Engineering/Technologies Standing Committees. Ron DePinho, Chair of the Mouse Engineering Committee engineering will work over the next few months to produce protocols for the website. The Technologies committee is planning an array techniques workshop for approximately 15-16 MMHCC members. The workshop will be held at Jackson Laboratories, May 14-16, 2001.

Ron Lubet, Gastro Intestinal Organ Site Committee. This committee is planning a pancreas workshop, May 24-25, 2001, at Vanderbilt University (Nashville); Steve Leach will be the point of contact.

Betty Tarnowski, Pathology and Lab Medicine Standing Committee. The Pathology committee is prioritizing their wish list. Concerns were expressed about funding mechanisms for workshops and pathology training programs.

2. The IG group decided to hold their regular meetings on the first Tuesday of each month at 2 pm; next meeting date will be March 6, 2000.

3. Meeting adjourned at 3:40 pm.

Agenda  
Implementation and Steering Group Meeting  
March 6, 2001  
2:00 pm, EPN-E

1. Review of the minutes from February 6, 2001 meeting
2. Update on Websites – MMHCC (public) and eMice (private)
3. MouseTracks newsletter
4. Recent and upcoming meetings:
  - March 1, 2001  
New Orleans  
AUTUM Technology Transfer  
Pre-Clinical Trials Standing Committee Meeting  
(Wendy Patterson, point of contact, IG)
  - March 24-28, 2001  
New Orleans  
AACR Annual Meeting
  - April 17-19, 2001  
Nashville  
Prostate Organ Site Committee pre Meeting (5 pathologists only)  
Charles Sawyers  
(Suresh Mohla, IG)
5. Best practices/lessons learned
6. Other business